

REMARKS

The Examiner is thanked for the due consideration given the application.

Claims 1-9 are pending in this application. The amendments to the claims address formalities and improve the language without changing the claim scope. As such, no issues are raised.

No new matter is believed to be added to the application by this amendment.

Entry of this amendment is respectfully requested because it addressed matters of form set forth in the Office Action and places the application in condition for allowance.

Request for Interview

If this amendment does not instantly place the application in condition for allowance, the Examiner is respectfully requested to contact the applicant's representative (Robert E. Goozner at 703-521-2297) in order to arrange an interview.

Claim Objections

Claim 5 has been objected to as containing informalities. The comments in the Office Action have been considered, and claim 5 has been accordingly amended.

Rejection Under 35 USC §112, Second Paragraph

Claims 1-9 have been rejected under 35 USC §112, second paragraph as being indefinite. This rejection is respectfully traversed.

The Office Action asserts that the "breaking down" step is not clear. However, the function of breaking down a task to its steps ("sub-blocks of tasks") is readily apparent to one of ordinary skill. Moreover, it is clear that the sub-blocks have a tree-like hierarchy ("root, branches, nodes and leaves") so as to set forth the order of the sub-blocks of tasks. Moreover, claim 1 has been amended to set forth "each of the components is represented by an action corresponding to a generic object of an **attributed** class."

Regarding claim 2 the Office Action asserts that a "complete processing cycle" is unclear. However one of skill would recognize that this pertains to performing the task. By "remote location" one sees that the process is not site specific and not all steps need be performed at the generator (20) shown in Figure 1.

The claims are thus clear, definite and have full antecedent basis.

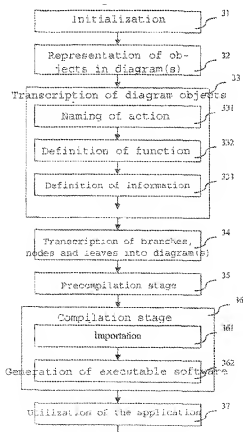
This rejection is believed to be overcome, and withdrawal thereof is respectfully requested.

Rejection under 35 USC §103(a)

Claims 1-9 have been rejected under 35 USC §103(a) as being unpatentable over TARUISHI (U.S. Patent 5,841,656) in view of BLOWERS et al. (U.S. Patent 6,298,474) and ETTRITCH et al. (U.S. Patent 6,467,079).

This rejection is respectfully traversed.

The present invention pertains to a method for generating application software for managing a process, where the method implements a system software that is common to all of the application software. The present invention is illustrated, by way of example, in Figure 3 of the application, which is reproduced below.



This schema is reflected in claim 1, which sets forth:

cybernetically representing said process in a set of tasks and in relationships between the tasks;

breaking down each task into sub-blocks of tasks, until all actions of the process are described using at least one diagram composed of components including a root, branches, nodes and leaves, whereby each of the components is represented by an action corresponding to a generic object of an attributed class;

transcribing each component of each diagram into an attributed generic object by capturing data in predetermined formats associated with said attributes by using a capture interface associated to each class of generic object;

automatic precompiling to verify that the attributed objects required for an operation logic of the application are present and are supplied appropriately in terms of syntax;

automatic compiling during which data description of the attributed objects are integrated and are assembled with the system software to produce an executable application software; and

executing executable software of the application.

In accordance with instant claim 1, **every component** (root, branch, node, leaf) corresponds to a generic object of an attributed class. The transcription of an object is performed by capturing data in **predetermined format** associated with the attributes by using a **capture interface associated to the class** of the generic object.

The Office Action assumes that the term "cybernetically" is intended to describe a user acting in conjunction with a programmed computer to define the application software.

However, this interpretation of the term "cybernetically" is not correct. For a more accurate description please refer to <http://en.wikipedia.org/wiki/Cybernetics>.

More accurately, cybernetics is the interdisciplinary study of the structure of regulatory systems. Cybernetics is closely related to **control theory** and **systems theory**. It is applicable to physical and social (that is, language-based) systems.

Cybernetics is pre-eminent when the system under scrutiny is involved in a closed signal loop, **where action by the system in an environment causes some change in the environment and that change is manifest to the system via information, or feedback that causes the system to adapt to new conditions: the system changes its behavior.**

This "circular causal" relationship is necessary and sufficient for a cybernetic perspective.

The term "cybernetics" stems from the Greek (kybernetes, steersman, governor, pilot, or rudder - the same root as government).

Cybernetics is a broad field of study, but the essential goal of cybernetics is to understand and define the

functions and processes of systems that have goals and that participate in circular "causal chains" that move from action to sensing to comparison with desired goal, and again to action. Studies in cybernetics provide a means for examining the design and function of any system, including social systems ***such as business management and organizational learning***, including for the purpose of making them more efficient and effective.

Cybernetics was defined by Norbert Wiener, in his book of that title, as the study of control and communication in the animal and the machine. Stafford Beer called it the science of effective organization and Gordon Pask extended it to include information flows "*in all media*" from stars to brains.

It includes the study of feedback, black boxes and derived concepts such as communication and control in living organisms, machines and organizations including self-organization. Its focus is how anything (digital, mechanical or biological) processes information, reacts to information, and changes or can be changed to better accomplish the first two tasks.

A more philosophical definition, suggested in 1956 by Louis Couffignal, one of the pioneers of cybernetics, characterizes cybernetics as "the art of ensuring the efficacy of action". The most recent definition has been proposed by Louis Kauffman, President of the American Society for Cybernetics; "*Cybernetics is the study of systems and processes that interact*

with themselves and produce themselves from themselves."

It is also important to consider the following concepts:

Feedback describes the situation when output from (or information about the result of) an event or phenomenon in the past will influence an occurrence or occurrences of the same (i.e. same defined) event/phenomenon (or the continuation/development of the original phenomenon) in the present or future. When an event is part of a chain of cause-and-effect that forms a circuit or loop, then the event is said to "feed back" into itself.

In science and engineering, a **black box** is a device, system or object which can be viewed solely in terms of its input, output and transfer characteristics without any knowledge of its internal workings, that is, its implementation is "opaque" (black).

In light of the above, it appears that the Office Action did not understand the limitation "*cybernetically representing the process in a set of tasks and in relationships between the tasks.*" What is implicit in this recitation is the characteristics of **feedback loop**, **checkpoint** and **situation evaluation** for triggering notifications or feedback loops.

However, the claims can be amended to more explicitly set forth these characteristics.

The feedback loop of the invention is described at paragraph [0022] of corresponding publication 2005/0257192, which states:

*According to particular characteristics, during the execution stage the executable application software implements a library for managing the sequence of events corresponding to the above-mentioned at least one diagram, whereby said library constitutes an automaton that manages the sequences of events of the processes and **executes the operations that checkpoint them**, whereby the method ensures that the sequences of events of the operations are defined in the application referential by describing the actual data flows.*

This is elucidated in paragraph [0163] of the corresponding publication, which states:

*Complex switching tasks 22. At each node of the tree structure, **switching between multiple branches is triggered** in three ways: a user selection 221, navigation using a menu, the identification of a specific situation 222 that includes several processing options (for example, in calculating the sales price of a product based on its nomenclature, the calculations of the cost of a product purchased and that of a product that is manufactured are different and give rise to different sub-processes), or a situation evaluation 223 on the basis of **check criteria whereby notifications or feedback loops are triggered** (for example, abnormal costs or deadlines).*

This is reflected in claim 1 of the present invention, which recites: ". . . *breaking down each task into sub-blocks of tasks, until all actions of the process are described using at least one diagram composed of components including a root, branches, nodes and leaves, whereby each of the components is represented by an action corresponding to a generic object of an attributed class . . .*"

The Office Action considers that this describes the user design stage wherein the user details the functionality of the application process at a finer level of granularity by drawing a tree like diagram.

This is correct, but the diagram is not really a tree because of the feedback loop.

The Office Action considers that the second use of the term "action" refers to the use of pre-programmed objects.

This is not correct. In the present invention, the components of the diagram are **actions**, and not predetermined objects (see paragraph [0050] of the corresponding publication).

In the cybernetics theory, and in the present invention, **action by the system in an environment causes some change in the environment and that change is manifest to the system via information, or feedback that causes the system to adapt to new conditions: the system changes its behavior** (see definition).

Moreover, paragraph [0051] of the corresponding publication states:

*With this method 10, the customer defines the bounds of the problem/process for which he wishes to employ a customized executable software program and its relationships with the environment. He can introduce into it exactly what the various people at the profit center do, the anticipated exceptional events (for example, employee vacations, maintenance shutdowns of a machine), and **random events** (for example, an urgent order or a machine failure) that he wishes to take into account and the notification decision criteria for which he wishes to provide.*

Paragraph [0230] of the corresponding publication states: *"During the representation and transcription stages, said at least one diagram preferably corresponds to at least one tree structure in which the nodes and leaves, where the code is implemented, are made up of actions, **whereby the return values of these actions determine the movement in the [tree] structure.**"*

Claim 1 of the present invention now states: ". . .transcribing each **component** of each diagram into an attributed generic object by capturing data in predetermined formats associated with said attributes by using a capture interface associated to each class of generic object. . ."

The Office Action considers that it describes generating a **source code** representing at least part of the structure.

This is not correct. The method may be used by people who have no knowledge of source coding, the description being made in everyday language, not in computer jargon. It is noted that the claims may be amended to set forth the present invention in more everyday language and not in computer jargon.

Turning to the applied art, none of the cited documents discloses or infers a method for cybernetically representing a process, including a **feedback loop**, **checkpoint** and **situation evaluation**. These limitations are at least implicit in the claims.

In particular, TARUISHI generates a sequential diagram (col. 10, lines 12-18), not a diagram with feedback loop.

BLOWERS et al. only represents a vision method, i.e., a deterministic method, with a finite number of tasks, where in the invention, the number of actions is infinite.

None of the cited documents provides a structure where, **switching between multiple branches is triggered** may be triggered on **a situation evaluation 223 the basis of check criteria whereby notifications or feedback loops are triggered**.

One of ordinary skill and creativity would thus not produce claim 1 of the present invention from a knowledge of the applied art. A *prima facie* case of unpatentability has thus not been made. Claims depending upon claim 1 are patentable for at least the above reasons.

This rejection is believed to be overcome, and withdrawal thereof is respectfully presented.

Conclusion

Prior art of record but not utilized is believed to be non-pertinent to the instant claims.

As no issues remain, the issuance of a Notice of Allowability is respectfully solicited.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized in this, concurrent, and future submissions, to charge any deficiency or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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